

- 1a. Problem 4.2. 15 a,b,e
  - b. Problem 4.3. 30 a,b
  - c. Problem 4.3. 36a
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- 2a. Problem 4.4 66 a b
  - b. Problem 4.4 61 a
  - c. The quantity  $\frac{\rho\sigma_Y}{\sigma_X}$  is the minimum of what least squares problem (see class notes)?  
Show work.
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- 3a Let  $X_1$  and  $X_2$  be independent random variables with pdf's  $f_1(x_1) = 2x_1$ ,  $0 < x_1 < 1$   
and  $f_2(x_2) = 4x_2^3$ ,  $0 < x_2 < 1$ . Find  $P((0.4 < X_1 < .8) \cap (0.4 < X_2 < 1))$
  - b. Problem 5.1. 5
- 4 Let  $f(x, y) = c0 \leq x \leq 1, x^3 \leq y \leq 1$ .
    - a. Find  $c$  so that  $f$  is a joint pdf
    - b. Find the marginals.
    - c. Find  $P(1/2 < X, 1/2 < Y)$
    - d. Find  $\text{Cov}(X, Y)$